

REMARKS

An Office Action was mailed on June 23, 2003. Claims 22-26, 28-30, 32, 33, 35, 36, 38 and 39 remain pending in this application upon entry of the amendments set forth above.

Specifically, claims 22, 28 and 35 have been amended so that the added limitation may be changed from a capability to another method step "applying to the capacitors voltages" in accordance with the allowable subject matter given in the previous office action dated February 3, 2003.

In view of the amendments made above and for the reasons stated below, it is respectfully submitted that the pending claims 22-26, 28-30, 32, 33, 35, 36, 38 and 39 are now in condition for allowance.

Claim Rejections under 35 U.S.C. §102(b) and §103(a)

The Examiner rejected claims 22, 23, 25 and 26 under 35 U.S.C. §102(e) as being clearly anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Blackadar et al. (U.S. Patent 6,336,365); rejected claims 24, 28-30, 32, 33, 35, 36, 38 and 39 under 35 U.S.C. §103(a) as being unpatentable over Blackadar et al; and rejected claims 22-26, 28-30, 32, 33, 35, 36, 38 and 39 under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (Specification pages 1 and 2) in view of Blackadar et al.

By way of review, the present invention is directed to a method for mounting and operating multilayered ceramic capacitors on a circuit board to thereby reduce audible sounds generated by piezoelectric effects, as defined in amended claim 22, 28 and 35 (and supported by page 3, lines 5-8). Specifically, two lands and/or two capacitors are mounted on the circuit board at substantially plane-symmetrical positions, as described in claims 22, 28 and 35 (and supported by page 8, line 12-15 and page 10, lines 13-15) and, then, voltages which have frequencies varying in an audible frequency band are applied to the capacitors to reduce the audible sounds, as defined in claims 22, 28 and 35 (and supported by page 15, lines 15-17).

In contrast, Blackadar et al. disclose a method for monitoring an acceleration of an object by using a transducer, as specified in col. 3, line 66 to col. 4, line 6. Specifically, a flexible circuit

board 710 with a transducer 708 attached thereon is provided; and an object 806 is mounted on the flexible circuit board 710 so that the acceleration of the object 806 may be monitored based on a signal, as illustrated in claim 4 of Blackadar et al.

Since the transducer 708 attached to the flexible circuit board 710 has a piezoceramic dielectric 706 therein, the transducer 708 generates the signal, i.e., an electric field, responsive to flexing of the flexible circuit board 710, as illustrated in col. 7, lines 23 to 32 and Fig. 7. In other words, if the flexible circuit board 710 is caused to be flexed in response to acceleration of the object, the piezoceramic dielectric 706 in the transducer 708 is compressed and/or stretched so that a signal indicative of the acceleration of the object may be generated between electrodes, i.e., pole conductors 714a and 714b, as illustrated in col. 12, lines 37 to 46.

In Blackadar et al., two transducers 404a and 404b are attached to the flexible circuit board 302 symmetrically so that mounting of each transducer 404a and 404b does not substantially affect the position of a neural axis 418, as illustrated in col. 11, lines 39-45 and Figs. 6A-6C.

Further, Applicant's Admitted Prior Art (AAPA: Specification pages 1 and 2) discloses a conventional circuit board having a single capacitor thereon in which the vibrations of the capacitors, i.e., audible sounds, are generated due to piezoelectric effects. Therefore, AAPA is directed to a conventional circuit board with a defect which is intended to be cured in the present invention

Specifically, Blackadar et al. are totally different from the present invention in that:

1) Blackadar et al. disclose a method for detecting whether the flexible circuit board 710 is bent or not by using the transducer 708 with a piezoceramic dielectric 706 therein in order to detect the acceleration of an object on the flexible circuit board, while the present invention is directed to a method for mounting capacitors on a circuit board and applying to the capacitors voltages with an audible frequency in order to reduce audible sounds;

2) Blackadar et al. detect electrical signals, i.e., voltages, generated from the transducer by mechanical deformation incurred therein. The present invention, however, applies the voltages with the audible frequency to two symmetrically-positioned capacitors, respectively, to obtain required capacitance therefrom while reducing noises therefrom.

3) Blackadar et al. may use only one transducer 708 to detect the bending of the flexible circuit board 710, while the inventive method should mount two capacitors and/or two lands on a circuit board at substantially plane-symmetrically to reduce audible sounds, as defined in claims 22, 28 and 35; and

4) Blackadar et al. use two transducers 404a and 404b in order to prevent a neutral axis 418 from being significantly affected by the mounting accuracy of each transducer 404a or 404b, while the present invention employs two capacitors to reduce the generation of audible sounds.

Therefore, it is respectively submitted that Blackadar et al. are conceptually and materially different from the present invention and that none of the features defined in the pending claims are disclosed, taught or even implied in Blackadar et al.

Accordingly, it is respectfully submitted that the Examiner's hindsight combination of Blackadar et al. with AAPA is entirely improper in the absence of any suggestion, teaching or motivation given in any of the prior art references to do so, and inasmuch as one skilled in the art would have no reason to make such combination.

Furthermore, even assuming arguendo that such combination was proper, such combination still cannot render the present invention obvious because neither Blackadar et al. nor the prior art disclose or even imply the present invention. Accordingly, even if every single disclosure contained in each of the references is selectively chosen and stracked together against the present invention, such combination cannot possibly suggest to an ordinary person skilled in the art the inventive features of the present invention.

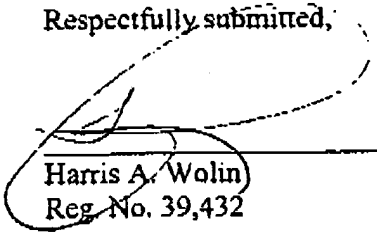
Accordingly, it is respectfully submitted that each of the independent claims 22, 28 and 35 defines an unobvious, novel and patentable invention over and above the prior art references, including Blackadar et al. and the prior art collectively or individually, and is, therefore, allowable. It is also believed that claims 23-26; 29, 30 and 33; and 36, 38 and 39 directly or indirectly depending on claims 22, 28 and 35, respectively, are allowable for the same reasons indicated with respect to the amended claims 22, 28 and 35 and further because of the additional features recited therein which, when taken alone and/or in combination with the features recited in the amended claims 22, 28 and 35 remove the invention defined therein further from the disclosures made in the prior art references.

Applicant believes that this is a full and complete response to the Office Action. For the reasons discussed above, Applicant now respectfully submits that all of the pending claims are in complete condition for allowance. Accordingly, it is respectfully requested that the Examiner's rejections be withdrawn; and that claims 22-26, 28-30, 32, 33, 35, 36, 38 and 39 be allowed in their present form. Should the Examiner require or consider it advisable that the specification, claims and/or drawings be further amended or corrected in formal respects, in order to place the case in condition for final allowance, then it is respectfully requested that such amendment or correction be carried out by Examiner's Amendment and the case be passed to issue.

Alternanvely, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, the Examiner is invited to telephone the undersigned.

Any fee due with this paper may be charged on Deposit Account 50-1290.

Respectfully submitted,


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